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Scolecobeltrania, an interesting new microfungus from Venezuela

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Abstract — A new microfungus collected on dead plant material from the "Cerro El Ávila" mountain range and "Parque Nacional Canaima" tropical forest in Venezuela is described and illustrated. *Scolecobeltrania vermispora* gen. & sp. nov. is characterized by macronematous branched conidiophores, polyblastic conidiogenous cells, and unicellular vermiform to sigmoid pale brown conidia with up to 11 hyaline transverse bands.

Key words — anamorphic fungi, systematics, leaf litter

Introduction

During two mycological surveys of anamorphic fungi in the cloud and tropical forests in Venezuela, we collected an interesting conspicuous fungus. It has some characters that are present in *Beltrania* and some allied genera, but the conidia differ morphologically from those in all previously described anamorphic genera of this group. We propose a new genus to accommodate this new fungus described here.

Plant samples were placed in paper and plastic bags, taken to the laboratory, and treated according to Castañeda (2005). Mounts of fungal material were prepared in polyvinyl alcohol-glycerol (8 g in 100 ml of water, plus 5 ml of glycerol) and diagnostic characters were measured at ×1000. Micrographs were obtained with a Zeiss Axioskop 40.

Taxonomy

Scolecobeltrania Iturr., R.F. Castañeda & Rob. Fernández, **gen. nov.**

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Differs from *Beltraniella* by polyfasciate scolecoconidia and from *Pseudobeltrania* by setae intermixed with conidiophores and polyfasciate scolecoconidia.

Type Species: *Scolecobeltrania vermispora* Iturr. et al.

Etymology: from *Scoleco-*, referring to conidia with a length/width radio >15:1 + *beltrania*, name of a similar anamorphic fungal genus.

Colonies on the natural substratum amphigenous, effuse, coalescent, felted to compact floccose, forming conspicuous patches, brown to olivaceous or black. Mycelium superficial and immersed. Setae erect, straight or sinuate, septate with or without radially lobed basal cell, smooth or verruculose, brown. Conidiophores macronematous, mononematous, erect, branched, septate, brown to olivaceous, smooth or verruculose. Conidiogenous cells monoblastic and polyblastic, discrete, determinate or indeterminate, with holoblastic sympodial proliferations. Conidial secession schizolytic. Conidia scolecosporous, solitary, unicellular, sigmoid, vermiform to long cylindrical, curved or sinuate, brown to olivaceous, always with several hyaline or subhyaline transverse bands, smooth or verruculose. Teleomorph unknown.

Scolecobeltrania vermispora Iturr., R.F. Castañeda & Rob. Fernández, **sp. nov.**

Figs. 1 –2

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Differs from *Beltraniella* spp. in its polyfasciate scolecoconidia and from *Pseudobeltrania* spp. in its multiseptate setae intermixed with conidiophores and multifasciate scolecoconidia.

Type: Venezuela, Bolivar State, tropical forest, Luepa, Sector Gran Sabana, Parque Nacional Canaima, 5°50′N 61°27′W, 880–1250 m alt., on decaying leaves of unidentified plant, 25.IV.2005, coll. Teresa Iturriaga (**Holotype**: VEN108367).

Etymology: Latin, *vermispora*, referring to worm-shaped conidia.

Colonies on the natural substrate, effuse, felted forming extensive parches, often coalescence, olivaceous-brown. Mycelium mostly superficial and immersed. Hyphae septate, 2–4 µm diam, profusely branched, densely anastomoses, sometimes forming a rudimentary stroma with somewhat similar "textura intricata", smooth, brown to pale brown. Setae erect, straight or curved to sinuate, cylindrical, acerose or lanceolate at the apex, 7–12-septate, 150–250 µm tall, 10–15 µm diam. at the radially lobed base, smooth, dark brown below, brown towards the apex. Conidiophores macronematous, mononematous, erect, dichotomous, trichotomous or irregularly branched, forming more or less a cluster at the high level, arising from superficial hyphae, 20–35 × 10–12 µm, smooth, pale brown to pale olivaceous-brown. Conidiogenous cells

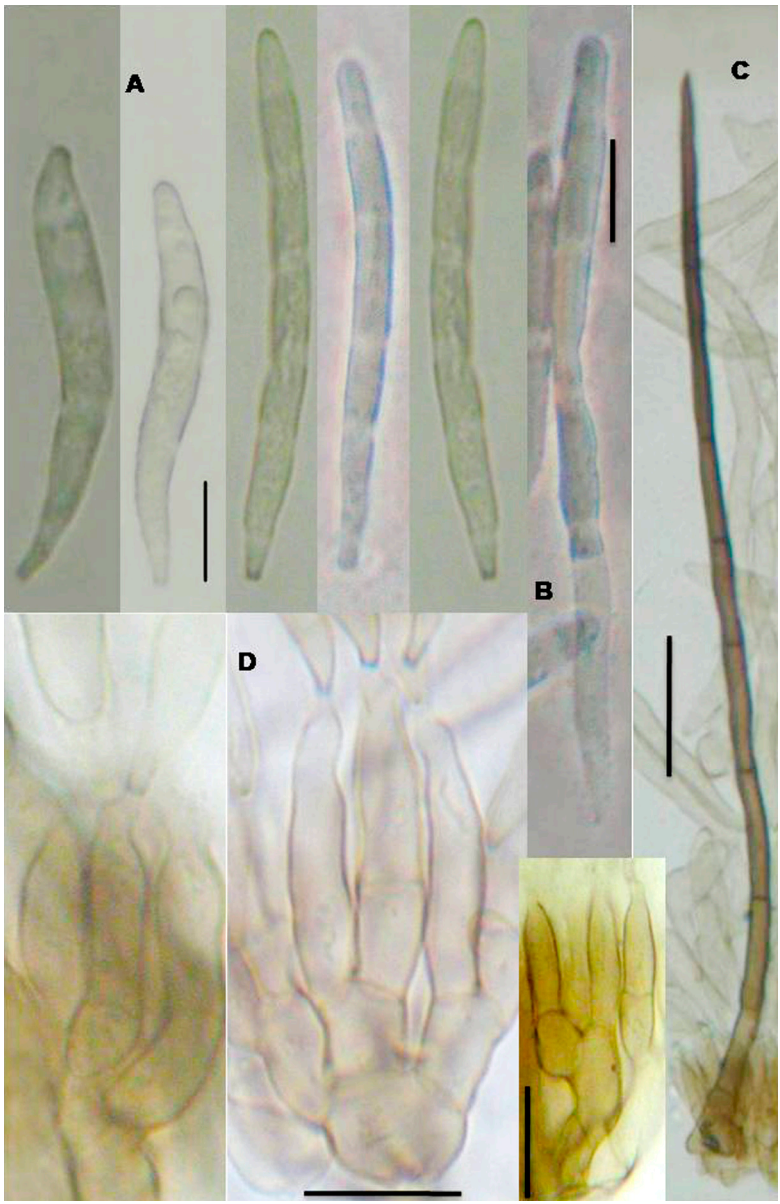

Fig. 1. *Scolecobeltrania vermispora* (ex holotype VEN108367).
A–B. Conidia. C. Seta. D. Conidiophores and conidiogenous cells.
Scale bars: A–B, D = 10 µm, C=25µm.

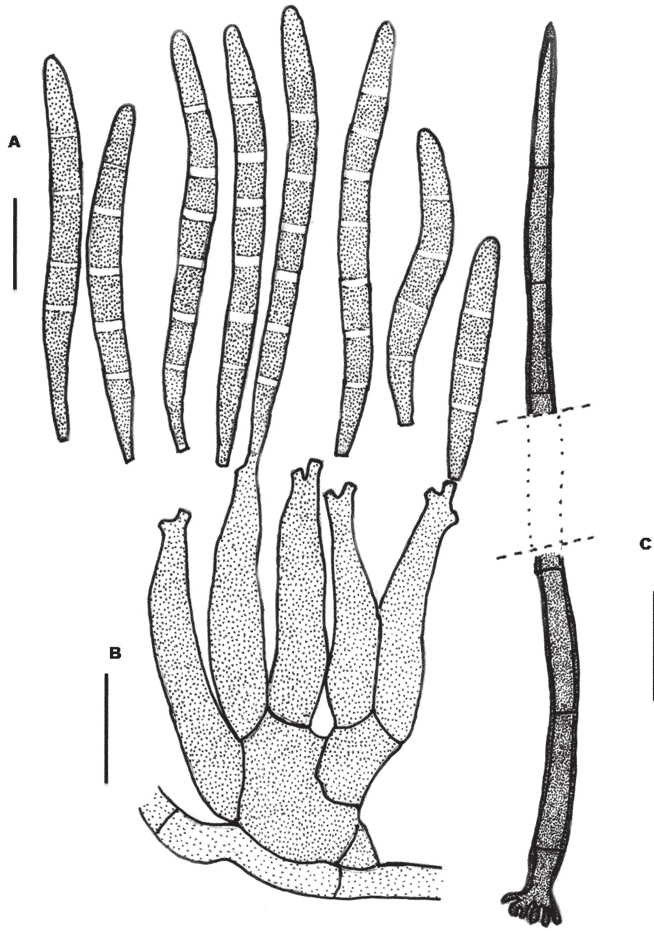

Fig. 2. *Scolecobeltrania vermispora* (ex holotype VEN108367).
A. Conidia. B. Conidiophore and conidiogenous cells. C. Seta.
Scale bars: A–B = 10 µm, C= 25 µm.

polyblastic, discrete, cylindrical, but slightly attenuate near the apex, denticulate with conspicuous denticles, somewhat opaque at the conidiogenous loci, indeterminate, with several sympodial proliferations, 8–12 × 3–3.5 µm, pale brown. Conidia solitary, vermiform, sigmoid, attenuate and truncate at the base, obtuse to rounded at the apex unicellular, 40–65 ×5.5–8.5 µm, smooth, dry, fasciate, pale brown to pale olivaceous brown, with (2–)5–11 transverse hyaline bands across the length of conidial body. Teleomorph unknown.

Additional specimen examined: **VENEZUELA**, **Caracas**, "Cerro El Ávila", Parque Nacional El Ävila, 10°33′N 66°51′W, on decaying leaves of *Clusia hilariana* Schltdl., 20.II.2008, coll. R Fernández INIFAT 2461.

Note: Seifert et al (2011) have provided a key, descriptions, and illustrations of *Beltrania* and similar anamorphic genera. Among these fungi the conidiophores and conidiogenous cells of *Beltraniella* Subram. and *Pseudobeltrania* Henn. are morphologically similar to *Scolecobeltrania*. Several *Beltraniella* species have irregular branched conidiophores with branches arising near the bases of straight thick-walled dark brown setae; similar conidiophores also occur in *Pseudobeltrania*, but it lacks setae. The conidia in *Beltraniella* are unicellular, turbinate, and oblageniform (or nearly so) with a hyaline transverse band frequently arising from separating cells or from conidiogenous loci (Pirozynski 1963, Castañeda Ruiz et al. 1996, Kendrick 2003, Seifert et al. 2011), and *Beltraniella* species with supra-equatorial subhyaline or hyaline (pore-like) spots have recently been segregated into the genus *Porobeltraniella* (Gusmão 2004). *Pseudobeltrania* has unicellular biconical olivaceous brown conidia with a transverse hyaline band near the widest part arising directly from conidiogenous loci (Heredia et al. 2002). Scolecoconidia with several transverse hyaline bands originating directly from conidiogenous loci are conspicuous unique characters that clearly separate *Scolecobeltrania* from the other genera.

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